

**GENDER AS A RISK FACTOR OF ADDICTIVE BEHAVIOUR AND  
SUBSTANCE ABUSE**

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**ABSTRACT:**

Introduction: Substance abuse and its negative consequences remain a major health and social problem worldwide. There is a variety of risk factors, including social status, genetic predisposition, and psychological features of the individual, which contribute to drug misuse and addiction. It is known that the addicts are prone to behave in a more risky way, which might lead to increased levels of traumatic accidents. Different research works established that males are more susceptible to addictive behavior than females. Materials and methods: Forensic medical examination of cadavers of deceased with data of drug abuse, toxicological and statistical analyses. Results: In the period between 2011 and 2014 in the Department of Forensic Medicine and Deontology-Sofia, 3945 cadavers were examined. Of them 159 were cases of fatal outcomes with data of drug abuse. More than 85% of the deceased drug addicts were male. There were 32 cases of traumatic death – 31 males and 1 female. Discussion and conclusion: The ratio of genders between the examined cases of drug addicts shows that males have almost 6-fold higher risk of fatal outcome due to drug abuse. For the traumatic cases of death there was only one female victim and 31 male victims. These results show that the risk of associated with substance abuse traumatic fatalities is increased in males. The attempts to prevent this risk should include education and management of anger and aggressive, self-destructive behavioral patterns.

*Key words: male gender, risk, drug addiction, behaviour*

**INTRODUCTION:**

Substance abuse and its negative consequences remain a major health and social problem worldwide. There is a variety of risk factors, including social status, genetic predisposition, and psychological features of the individual, which contribute to drug misuse and addiction. Substance addiction shows familial aggregation and some researchers suggest that healthy relatives of addicted individuals might share altered behavioral and cognitive features with individuals suffering from addiction (Reiter et al., 2016). The specific vulnerability to drug addiction depends upon the interactions between the biological background of the individual, the environment, and age. These interactions are characterized by complexity and they are difficult to tease apart (Sagheddu et al., 2015). Poverty, social and cultural variables, personality disorders, relationships with other addicts, and previous incarceration or drug misuse are all risk factors (Esbec et al., 2016). Co-occurrence of substance dependence with other types psychiatric disorders is very common, and might lead to diagnostic and therapeutic difficulties (Klimkiewicz et al., 2015). According Borçoi et al., 2015, there is a connection between amphetamine use during pregnancy and development of addictive behavior. Correlation between addiction and some genotypes is also established (Isaza et al., 2013). It is known that the addicts are prone to behave in a more risky way, which might lead to increased levels of traumatic accidents (Ehrlich et al., 2016). Amphetamine-type substances are frequently detected among drivers injured or killed due to

road-trauma (Hayley et al., 2016).

**MATERIALS AND METHODS:**

Forensic medical examination of cadavers of deceased with data of drug abuse, toxicological and statistical analyses.

**RESULTS:**

For the period between January 2011 and December 2014, 3945 cadavers were examined in the Department of Forensic Medicine and Deontology-Sofia. Of them 159 were cases of fatal outcomes with data of drug abuse. More than 85% (137) of the deceased drug addicts were male. In 2011 there were 43 deceased drug addicts, of which 38 males and 5 females. For 2012 the ratio was 31:6. In 2013 the fatal cases amongst drug users were with similar distribution – 36 men and 7 women. In 2014 the cases of death due to drug abuse were 36 – 32 males and 4 females. There is a wide variety of the established causes and manners of death. The peak of mortality rate is in the interval 30-34 years. In 90 cases the fatal outcome was due to acute intoxications with one, two, or more illicit substances in different combinations. The most commonly abused drugs in fatal cases were opiates – heroin and methadone, followed by cocaine and amphetamines, which are stimulants. In a quarter of the cases the illicit substances were used or abused in combination with ethylic alcohol. In 37 cases the causes of death were pathological changes in vital organs, which were connected with prolonged, mostly intravenous drug abuse. The most frequently affected were the organs of respiratory and cardiovascular systems. There were 32 cases of traumatic death – suicides, homicides, and accidents. The distribution by gender of the cases of traumatic death in the group of drug addicts is 31 males and 1 female. Detailed data of gender distribution for each year is shown in Tables №№1, 2.

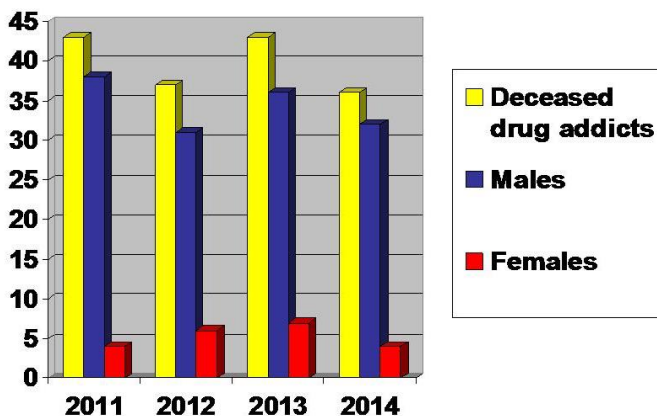


Table 1. Gender distribution of the cases of deceased drug addicts for the period 2011-2014.

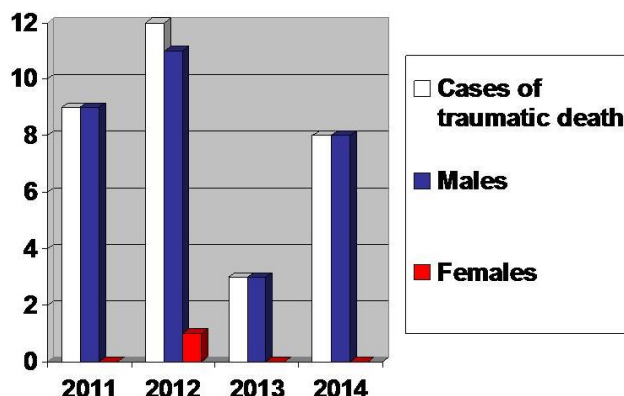


Table 2. Gender distribution of the deceased drug addicts with traumatic cause of death for the period 2011-2014.

#### DISCUSSION AND CONCLUSION:

The ratio of genders between the examined cases of drug addicts shows that males have almost 6-fold higher risk of fatal outcome due to drug abuse. For the traumatic cases of death there was only one female victim and 31 male victims. These results show that the risk of traumatic fatalities associated with substance abuse is increased in males. Тимонов et al., 2012 described postural asphyxiation case as a result and in combination with alcohol intoxication with a male victim. The prevalence of the male gender among drug addicts might be also connected with the occupation (Lan et al., 2016). The established correlation between gender, fatal outcomes in cases of drug abuse and traumatic death cases might be explained with the complex features of addictive behavior. There should be further researches on the problem in order to accept or refute the gender as a possible risk factor of addiction. The attempts to prevent this risk should include education and management of anger and aggressive, self-destructive behavioral patterns (Haardörfer et al., 2016).

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